

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An image forming apparatus which is ~~to be~~ connected to a network and in which a plurality of applications ~~can be~~ are installed, the image forming apparatus comprising:

a printer configured to produce a physical copy of a document;

a user information input part for a user to input user information and user authentication information;

an external server communication part, which sends the inputted user information to an external server through the internet and receives pre-registered user authentication information from the external server through the internet;

one or more authentication parts, which authenticate the user authentication information by comparing the received pre-registered user authentication information with the authentication information inputted by the user; and

a use control part for receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for one or more applications according to the received one or more authentication results,

wherein the external server stores the pre-registered user authentication information independently from the apparatus at a separate location on the internet.

2. (Previously Presented) The image forming apparatus as claimed in claim 1, wherein the use control part refers to information indicating the one or more authentication parts that correspond to an application, causes the one or more authentication parts to perform authentication process when the application is used, and sends an authentication result to the application.

3. (Previously Presented) The image forming apparatus as claimed in claim 1, wherein the use control part refers to information indicating the one or more applications that correspond to an authentication part, and sends an authentication result of the authentication part to an application in the one or more applications when the application is used.

4. (Original) The image forming apparatus as claimed in claim 1, wherein the use control part includes a part for controlling use restriction for a function of the application.

5. (Original) The image forming apparatus as claimed in claim 1, wherein the use control part sends an authentication result indicating success of authentication to the one or more applications only when authentication by all of the one or more authentication parts succeeds.

6. (Previously Presented) The image forming apparatus as claimed in claim 1, wherein the use control part sends an authentication result indicating success of authentication to the one or more applications when authentication by at least one authentication part in the one or more authentication parts succeeds.

7. (Original) The image forming apparatus as claimed in claim 1, wherein each of the one or more authentication part is an application or an apparatus connected to the image forming apparatus.

8. (Previously Presented) The image forming apparatus as claimed in claim 1, wherein the pre-registered user authentication information is registered beforehand in the external server.

9. (Previously Presented) The image forming apparatus as claimed in claim 1, wherein the user authentication information includes billing information, and the pre-registered user authentication information includes available billing information.

10. (Previously Presented) The image forming apparatus as claimed in claim 1, the image forming apparatus further comprising hardware resources used for image forming processes, and control services that perform processes of a system side including control of the hardware resources,

wherein the image forming apparatus is configured to install a plurality of applications separately from the control services, and the image forming apparatus includes the use control part as a control service.

11. (Previously Presented) The image forming apparatus as claimed in claim 1, wherein

the user information input part is configured for a user to input user identification information and user authentication information to be pre-registered in the external server,

the external server communication part sends the user identification information and the user authentication information to be pre-registered in the external server input by the user to the external server, and

the authentication part determines whether the pre-registered user authentication information received from the external server is same as the user authentication information input by the user, and sending an authentication result to the use control part.

12. (Previously Presented) The image forming apparatus as claimed in claim 1, further comprising:

a user information receiving part for receiving, from a client terminal, user identification information and billing information indicating usage of the image forming apparatus by a user to be pre-registered in the external server, wherein

the external server communication part sends the user identification information and the billing information to be pre-registered in the external server to the external server, and receives the billing information pre-registered in the external server and corresponding to the user information input by the user, from the external server, and

the authentication part compares billing information input by a user with the pre-registered billing information received from the external server, and sends a comparing result to the use control part.

13. (Previously Presented) The image forming apparatus as claimed in claim 12, wherein the client terminal reads the user identification information and the billing information to be pre-registered in the external server from an external recording medium.

14. (Previously Presented) The image forming apparatus as claimed in claim 11, wherein the external server is a Lightweight Directory Access Protocol server.

15. (Currently Amended) A use control method for an application in an image forming apparatus comprising a printer for producing a physical copy of a document, where the image forming apparatus ~~which~~ is connected to a network and in which a plurality of applications ~~can be~~ are installed, the use control method comprising:

- receiving a user information and user authentication information input by a user;
- sending the inputted user information to an external server through the internet;
- receiving pre-registered user authentication information from the external server through the internet;

- authenticating the user authentication information by comparing the pre-registered user authentication information with the authentication information inputted by the user, the comparison performed by one or more authentication parts; and

- receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for one or more applications according to the received one or more authentication results,

- wherein the external server stores the pre-registered user authentication information independently from the apparatus at a separate location on the internet.

16. (Previously Presented) The use control method as claimed in claim 15, further comprising:

- referring to information indicating one or more authentication parts that correspond to an application;

- causing the one or more authentication parts to perform authentication process when the application is used; and

- sending an authentication result to the application.

17. (Previously Presented) The use control method as claimed in claim 15, further comprising:

referring to information indicating one or more applications that correspond to an authentication part; and

sending an authentication result to an application in the one or more applications when the application is used.

18. (Previously Presented) The use control method as claimed in claim 15, further comprising:

controlling use restriction for a function of an application.

19. (Previously Presented) The use control method as claimed in claim 15, further comprising:

sending an authentication result indicating success of authentication to the one or more applications only when authentication by all of the one or more authentication parts succeeds.

20. (Previously Presented) The use control method as claimed in claim 15, further comprising:

sending an authentication result indicating success of authentication to the one or more applications when authentication by at least one authentication part in the one or more authentication parts succeeds.

21. (Original) The use control method as claimed in claim 15, wherein each of the one or more authentication part is an application or an apparatus connected to the image forming apparatus.

22. (Previously Presented) The use control method as claimed in claim 15, wherein the pre-registered user authentication information is pre-registered in the external server.

23. (Previously Presented) The use control method as claimed in claim 15, wherein the user authentication information includes billing information, and the pre-registered user authentication information includes available billing information.

24. (Previously Presented) The use control method as claimed in claim 15, further comprising:

installing the plurality of applications separately from control services that perform processes of a system side, wherein

the control service receives the one or more authentication results and controls use restriction for the one or more applications according to the received one or more authentication results.

25. (Previously Presented) The use control method as claimed in claim 15, further comprising:

inputting user identification information and user authentication information to be pre-registered in the external server;

sending the user identification information and the user authentication information to be pre-registered in the external server input by the user to an external server; and

determining whether the pre-registered user authentication information received from the external server is same as the user authentication information input by the user.

26. (Previously Presented) The use control method as claimed in claim 15, further comprising:

receiving, from a client terminal, user identification information and first billing information indicating usage of the image forming apparatus by a user to be pre-registered in the external server;

sending the user identification information and the billing information to be pre-registered in the external server to an external server;

receiving the billing information pre-registered in the external server and corresponding to the user information input by the user, from the external server; and

comparing billing information input by a user with the pre-registered billing information received from the external server.

27. (Previously Presented) The use control method as claimed in claim 26, wherein the client terminal reads the user identification information and the billing information to be pre-registered in the external server from an external recording medium.

28. (Previously Presented) The use control method as claimed in claim 25, wherein the external server is a Lightweight Directory Access Protocol server on the internet.

29. (Currently Amended) An image forming apparatus which is ~~to be~~ connected to a network and in which a plurality of applications ~~can be~~ are installed, the image forming apparatus comprising:



a printer configured to produce a physical copy of a document;

a user information input part for a user to input user information and user authentication information;

an external server communication part, which sends the inputted user information to an external server through the internet and receives pre-registered user authentication information from the external server through the internet;

an authentication part, which authenticates the user authentication information by comparing the received pre-registered user authentication information with the authentication information inputted by the user;

a display part for displaying a screen, on an operation panel of the image forming apparatus, for selecting one or more applications for the authentication part, in which user authentication by the authentication part is applied to use of the one or more applications; and

a use control part for receiving an authentication result from the authentication part, and controlling use restriction for the one or more applications according to the authentication result,

wherein the external server stores the pre-registered user authentication information independently from the apparatus at a separate location on the internet.

30. (Original) The image forming apparatus as claimed in claim 29, wherein information input from the screen is stored in the image forming apparatus as information indicating the one or more applications corresponding to the authentication part.

31. (Original) The image forming apparatus as claimed in claim 29, wherein the display part displays a screen for selecting one or more functions of an application to which user authentication by the authentication part is applied.

32. (Currently Amended) An image forming apparatus comprising which is ~~to be~~ connected to a network and in which a plurality of applications ~~can be~~ are installed, the image forming apparatus comprising:

a printer configured to produce a physical copy of a document;

a user information input part for a user to input user information and user authentication information;

an external server communication part, which sends the inputted user information to an external server through the internet and receives pre-registered user authentication information from the external server through the internet;

one or more authentication parts, which authenticate the user authentication information by comparing the received pre-registered user authentication information with the authentication information inputted by the user;

a display part for displaying a screen, on an operation panel of the image forming apparatus, for selecting the one or more authentication parts for an application, in which user authentication by the one or more authentication parts is applied to use of the application; and

a use control part for receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for the application according to the one or more authentication results,

wherein the external server stores the pre-registered user authentication information independently from the apparatus at a separate location on the internet.

33. (Original) The image forming apparatus as claimed in claim 32, wherein information input from the screen is stored in the image forming apparatus as information indicating the one or more authentication parts corresponding to the application.

34. (Original) The image forming apparatus as claimed in claim 32, wherein the display part displays a screen for setting relationship among the one or more authentication parts.

35. (Previously Presented) The image forming apparatus as claimed in claim 32, wherein the display part displays a screen for setting information indicating that user authentication for use of the application succeeds only when authentication by all of the one or more authentication parts succeeds.

36. (Previously Presented) The image forming apparatus as claimed in claim 32, wherein the display part displays a screen for setting information indicating that user authentication for use of the application succeeds when authentication by at least one of the one or more authentication parts succeeds.

37. (Canceled)

38. (Previously Presented) The image forming apparatus as claimed in claim 29, wherein the user authentication information includes billing information, and the pre-registered user authentication information includes available billing information.

39. (Previously Presented) The image forming apparatus as claimed in claim 29, the image forming apparatus further comprising hardware resources used for image forming processes, and control services that perform processes of a system side including control of the hardware resources,

wherein the image forming apparatus is configured to install a plurality of applications separately from the control services, and the image forming apparatus includes the use control part and the display part as a control service.

40. (Currently Amended) A use control method for an application in an image forming apparatus comprising a printer for producing a physical copy of a document, where the image forming apparatus ~~which~~ is connected to a network and in which a plurality of applications ~~can be~~ are installed, the use control method comprising:

- receiving a user information and user authentication information input by a user;
- sending the inputted user information to an external server through the internet;
- receiving pre-registered user authentication information from the external server through the internet;

- displaying a screen for selecting one or more applications for an authentication part, in which user authentication by the authentication part is applied to use of the one or more applications;

- authenticating the user authentication information by comparing the pre-registered user authentication information with the authentication information inputted by the user, the comparison performed by the authentication part; and

- receiving an authentication result, and controlling use restriction for the one or more applications according to the authentication result,

- wherein the external server stores the pre-registered user authentication information independently from the apparatus at a separate location on the internet.

41. (Previously Presented) The use control method as claimed in claim 40, further comprising:

storing information input from the screen in the image forming apparatus as information indicating the one or more applications corresponding to the authentication part.

42. (Previously Presented) The use control method as claimed in claim 40, further comprising:

displaying a screen for selecting one or more functions of an application to which user authentication by the authentication part is applied.

43. (Currently Amended) A use control method for an application in an image forming apparatus comprising a printer for producing a physical copy of a document, where the image forming apparatus ~~which~~ is connected to a network and in which a plurality of applications can be installed, the use control method comprising:

receiving a user information and user authentication information input by a user;  
sending the inputted user information to an external server through the internet;  
receiving pre-registered user authentication information from the external server through the internet;

displaying a screen for selecting one or more authentication parts for an application, in which user authentication by the one or more authentication parts is applied to use of the application;

authenticating the user authentication information by comparing the pre-registered user authentication information with the authentication information inputted by the user, the comparison performed by the one or more authentication parts; and

receiving one or more authentication results from the one or more authentication parts, and controlling use restriction for the application according to the one or more authentication results,

wherein the external server stores the pre-registered user authentication information independently from the apparatus at a separate location on the internet.

44. (Previously Presented) The use control method as claimed in claim 43, further comprising:

storing information input from the screen in the image forming apparatus as information indicating the one or more authentication parts corresponding to the application.

45. (Previously Presented) The use control method as claimed in claim 43, further comprising:

displaying a screen for setting relationship among the one or more authentication parts.

46. (Previously Presented) The use control method as claimed in claim 43, further comprising:

displaying a screen for setting information indicating that user authentication for use of the application succeeds only when authentication by all of the one or more authentication parts succeeds.

47. (Previously Presented) The use control method as claimed in claim 43, further comprising:

displaying a screen for setting information indicating that user authentication for use of the application succeeds when authentication by at least one of the one or more authentication parts succeeds.

48. (Previously Presented) The use control method as claimed in claim 40, wherein the pre-registered user authentication information is pre-registered in the external server.

49. (Previously Presented) The use control method as claimed in claim 40, wherein the user authentication information includes billing information, and the pre-registered user authentication information includes available billing information.

50. (Previously Presented) The use control method as claimed in claim 40, further comprising:

installing a plurality of applications separately from control services that perform processes of a system side, wherein

the control service receives the one or more authentication results and controls use restriction for the one or more applications according to the received one or more authentication results.

51. (Previously Presented): The image forming apparatus as claimed in claim 1, wherein the one or more authentication parts is a plurality of authentication parts, and

the use control part is configured to connect the plurality of authentication parts with the one or more applications.